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		Official page numbers:
NATIONAL GOALS AND OBJECTIVES FOR THE CONTROL OF VACCINE-PREVENTABLE DISEASES OF INFANTS AND CHILDREN	F-1	49 – 54
UPDATE: CHILDHOOD VACCINE-PREVENTABLE DISEASES — UNITED STATES, 1994	F-4	54 – 55
RESPIRATORY VIRUS SURVEILLANCE (as of 18 March, 1995)	F-5	55 – 56

For reference purposes, citing should refer to the page numbers of the printed copy and not to those of the FAX copy (F-#).

NATIONAL GOALS AND OBJECTIVES FOR THE CONTROL OF VACCINE-PREVENTABLE DISEASES OF INFANTS AND CHILDREN

In September 1990, the leaders of 71 countries, including Canada, gathered at the United Nations for the world summit for children. World leaders committed their governments to act on behalf of children and signed a declaration establishing a number of child health goals with respect to disease eradication or reduction and immunization coverage. This resulted in Health Canada's commit- ment to support the development of national child health goals through the Children at Risk Initiative Program. Although most of the initiative was to be led by the Health Programs and Services Branch (HPSB), it was agreed that the Laboratory Centre for Disease Control (LCDC), Health Protection Branch would collaborate with HPSB in the process of developing national child health goals and would lead the specific development of goals for vaccine- preventable diseases. The National Advisory Committee on Immunization (NACI), the Advisory Committee on Epidemiology (ACE), and the Advisory Committee on Community Health (ACCH) identified a need for a coordinated approach to the control of communicable diseases. In the fall of 1991, LCDC presented a discussion paper on vaccine-preventable disease goals to ACCH. Further to that discussion, LCDC presented a framework for the development of national goals at the July 1992 ACCH meeting. This development was to rely on a process of discussion and consensus building.

As part of its commitment to this program, the Childhood Immunization Division, Bureau of Communicable Disease Epidemiology, LCDC, sponsored a series of four consensus conferences funded under the Brighter Futures Initiative. These conferences took place on 1-2 December 1992, for measles; 11-13 May 1993, for pertussis; 31 January to 2 February 1994, for mumps and rubella; and 4 October 1994, for diphtheria, tetanus, poliomyelitis, *Haemophilus influenzae b* and hepatitis B.

Participants at the conference included representatives from all the provinces and territories, usually the provincial/territorial epidemiologist and a representative from a local health unit; the Medical Services Branch, the Bureau of Biologics, Drugs Directorate and LCDC, Health Canada; the vaccine manufacturers; the Canadian Paediatric Society; the College of Family Physicians; the Canadian Medical Association; the Canadian Nurses Association; the Canadian Public Health Association; the Canadian Task Force for Periodic Health Examination; the Association of Obstetricians and Gynaecologists; the Canadian Liver Foundation; ACCH and the Advisory Committee on Population Health; the Pan American Health Organization; and national and international experts. Many of the participants were members of the NACI, ACE, and the Technical Advisory Committee.

The objectives of the conferences were two-fold: first and foremost, to develop national goals and objectives (all four conferences) and second, to discuss and determine the best strategy for achieving these goals as well as to discuss the many problem areas regarding some of the diseases (for the first three conferences).

The purpose of this report is to consolidate in one document all national goals and objectives pertaining to vaccine-preventable diseases of infants and children that were developed through the various consensus conferences. These goals were previously published for measles[1], pertussis[2], mumps and rubella[3] but not for the diseases discussed at the last conference. Because the last conference's objective was only to set goals, no specific proceedings will be published.

The wording of some of the previously published goals has been slightly altered for consistency but the content and the tenor have remained the same.

Recommendations that were common to all diseases are presented under the heading General Goals and Targets. The others are listed by disease in alphabetic order. It is to be noted that the

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variation in the format for the goals and targets from one disease to another reflects different situations, achievements, priorities, and public health impact.

General Goals and Targets

- Ensure that all vaccines administered have been properly transported, stored and delivered and that there is continual surveillance for adverse reactions and monitoring of vaccine efficacy.
- Review all goals and targets in 1999*.

DIPHTHERIA

Goal

- Eliminate indigenous cases of diphtheria by the year 1997.

Targets

- Achieve and maintain up-to-date† diphtheria immunization by the second birthday in 97% of children by the year 1997.
- Achieve and maintain up-to-date diphtheria immunization by the seventh birthday in 99% of children by the year 1997.

INVASIVE *HAEMOPHILUS INFLUENZAE* TYPE B INFECTIONS

Goal

- Achieve and maintain the absence of preventable cases of invasive *Haemophilus influenzae* type b (Hib) infections in children by the year 1997.

Target

- Achieve and maintain up-to-date Hib immunization by the second birthday in 97% of the children by the year 1997, recommending that the immunization be given in accordance with the recommended schedule beginning at 2 months of age.

HEPATITIS B

Goal

- Reduce the prevalence of indigenously acquired chronic hepatitis B infections in children and young adults by 90% by the year 2015.

Targets

- Screen 100% of pregnant women for evidence of hepatitis B surface antigen and immunize 100% of neonates of carrier mothers with vaccine and hepatitis B immune globulin as soon as possible after birth, by the year 1995.
- Establish routine universal hepatitis B immunization for children by the year 1997.
- Achieve and maintain 95% hepatitis B immunization of populations targetted in universal programs by the year 1997.
- Ensure that each province and territory has a policy to provide hepatitis B vaccine to all high-risk groups as outlined in the *Canadian Immunization Guide*, 4th edition, 1993, by the year 1995.

MEASLES

Goal

- Eliminate indigenous measles in Canada by the year 2005.

Targets

- Achieve and maintain measles immunization with the first dose of vaccine by the second birthday in 97% of children by the year 1997.
- Achieve and maintain measles immunization with a second dose by the seventh birthday* in 99% of children by the year 2000.
- Achieve and maintain an incidence of less than 1/100,000 in each province/territory by the year 2000.

MUMPS

Goal

- Maintain an active prevention program for mumps to minimize serious sequelae.

Targets

- Achieve and maintain mumps immunization by the second birthday in 97% of children by the year 1997.
- Achieve and maintain mumps immunization by the seventh birthday* in 99% of children by the year 1997.

PERTUSSIS

Goals

- Reduce the morbidity and mortality related to pertussis infection.
- Immunize all Canadian children against pertussis according to the NACI guidelines.

Targets

- Achieve and maintain up-to-date pertussis immunization by the second birthday in 95% of children by the year 1997†.
- Achieve and maintain up-to-date pertussis immunization by the seventh birthday‡ in 95% of children by the year 1997†.
- Have all reported cases of pertussis managed appropriately.

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* The date previously published for reviewing rubella goals and targets was 1997; it has been changed to be consistent with that set for the other diseases.

† Up-to-date: having the required number doses of a specific vaccine as recommended by NACI.

* The goals previously published indicated immunization before school entry. This was changed to be consistent with the other targets and to facilitate monitoring of all targets.

† The initially published target read "Have health units in Canada report ≥ 95% age-appropriate pertussis immunization by the year 1997." It was modified to be consistent with the other targets and to facilitate evaluation.

‡ The goals previously published indicated immunization before school entry; this was changed to be consistent with the other targets and to facilitate monitoring of all targets.

- Ensure that severity of disease, as indicated by pertussis-related admissions to intensive care units, is reduced by 50% by the year 1997 (based on a moving average).
- Ensure that reporting of pertussis cases to the national level is standardized by the year 1994.

POLIOMYELITIS

Goals

- Maintain elimination of wild indigenous poliomyelitis.
- Prevent future import-related cases.

Targets

- Achieve and maintain 97% immunization with ≥ 3 doses of polio vaccine by the second birthday by the year 1997.
- Achieve and maintain up-to-date poliomyelitis immunization by the seventh birthday in 99% of children by the year 1997.

RUBELLA

Goal

- Eliminate indigenous rubella infection during pregnancy and thus prevent fetal damage, congenital rubella syndrome and other negative outcomes of infection by the year 2000.

Targets

- Achieve and maintain up-to-date rubella immunization by the second birthday in 97% of children by the year 1997.
- Achieve and maintain up-to-date rubella immunization before school entry in 99% of children by the year 1997.
- Achieve and maintain up-to-date rubella immunization in 99% of 14 to 15-year-olds by the year 1997.
- Screen serologically and/or obtain date of immunization of ALL pregnant women seen prenatally for rubella susceptibility by the year 1995.
- Achieve and maintain postpartum immunization for rubella of 99% of all susceptible women prior to hospital discharge by the year 1995.
- Ensure that all women of childbearing age have a documented history of rubella immunization and, if not, that they are offered rubella vaccine to decrease the rate of rubella-negative primigravida women to less than 4% by the year 1997.

TETANUS

Goal

- Maintain absence of neonatal and childhood tetanus.

Targets

- Achieve and maintain up-to-date tetanus immunization by the second birthday in 97% of children by the year 1997.
- Achieve and maintain up-to-date tetanus immunization by the seventh birthday in 99% of children by the year 1997.

In addition to the above goals and targets, consensus conferences have stressed the need:

- to follow the recommendations from the working group on polio eradication[4] and from the national certification commission[5];
- to reinforce the importance of adult immunization for the above-mentioned diseases (tetanus in particular);
- to achieve vaccine coverage levels at the national, provincial and territorial, and health unit level; and
- to try to immunize at the age recommended by the NACI[6].

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4. Minutes from the Working Group on Polio Eradication, March 14, 1994, Toronto, Ontario.
5. Report of the National Certification Commission on Polio Eradication in Canada. Presented at the Meeting of the International Certification Commission on Polio Eradication, Washington, August 22-25, 1994.
6. National Advisory Committee on Immunization. *Canadian immunization guide*. 4th ed. Ottawa, Ont: Health Canada, 1993. (Supply and Services Canada, Cat. No. H49-8/1993E.)

Editorial Comment

Before this initiative, some provinces had set their own goals or were in the process of developing them, but there were no national goals for vaccine-preventable diseases in Canada unlike the United States and the United Kingdom.

National goals are important to achieve the desired public health outcome; to define direction to guide policy, program planning and evaluation; and to provide a coordinating framework for policy reform and priority setting and for health planning directed towards specific outcomes.

Endorsement of the goals as well as their implementation should not involve an extra burden on the public health system. On the contrary, in the long term it should prove cost-beneficial. This will, however, undoubtedly involve reallocating some funds, currently used for treatment or outbreak control, to routine preventive strategies.

Obviously, monitoring of progress towards the goals and targets will require regular monitoring of immunization delivery and, in particular, of vaccine coverage, and strengthening of disease surveillance at the federal and provincial levels.

Beyond endorsement at the national and provincial level and by professional organizations, it is everyone's duty to work towards achieving these goals and targets for a better future for our children. As part of its reinvestment, Health Canada has started to build this evaluation capability as well as providing more support for the provinces.

UPDATE: CHILDHOOD VACCINE-PREVENTABLE DISEASES — UNITED STATES, 1994

In 1993, the Childhood Immunization Initiative (CII) established disease elimination goals for six childhood vaccine-preventable diseases. Specific goals for 1996 include elimination of indigenous transmission of measles, rubella (and congenital rubella syndrome [CRS]), poliomyelitis (polio) caused by wild poliovirus, and diphtheria in all age groups; elimination of tetanus in children aged < 15 years; and elimination of invasive disease due to *Haemophilus influenzae* type b (Hib) in children aged < 5 years. This report summarizes progress toward reaching these goals during January to August 1994 and compares these findings with those from the same period during 1993.

Based on provisional data for reporting of vaccine-preventable diseases to the National Notifiable Diseases Surveillance System (NNDSS), during January to August 1994, the occurrence of polio, diphtheria, tetanus, and CRS remain at or near the disease elimination goals. In comparison with 1993, NNDSS indicates a substantial increase in reported cases of measles, a less dramatic increase in reported cases of rubella, and decreases in reported cases of *H. influenzae* invasive disease, pertussis, and mumps.

Polio, diphtheria, and tetanus — No cases of indigenously transmitted wild poliovirus infection have been reported in the United States since 1979, and in September 1994, the International Commission for the Certification of Poliomyelitis Eradication in the Americas certified elimination of poliovirus from the Americas[1]. One case of vaccine-associated polio in a 3-month old child has been confirmed in 1994. One case of diphtheria has been reported in 1994 in an unvaccinated 4-year-old boy in Massachusetts who died of diphtheria myocarditis; the child's parents were members of a religious group that does not routinely accept vaccination. During 1994, 22 cases of tetanus were reported; eight (40%) were in persons aged ≥ 65 years, and none were in children aged < 15 years.

Measles — During 1994, 814 cases of measles were provisionally reported to NNDSS. During the first 26 weeks of 1994, 15 measles outbreaks (clusters of five or more epidemiologically related cases) were reported by 10 states[2]. However, only 18 cases were reported in August, as outbreak activity diminished. Of 808 cases in persons with known age, 185 (23%) were in persons aged < 5 years, compared with 93 (38%) of 245 cases in persons with known age during 1993.

Rubella — During 1994, 204 cases of rubella were reported to NNDSS, compared with 157 cases during 1993. Of 200 cases in persons with known age, 19 (9%) were in persons aged < 5 years, compared with 23 (16%) of 146 during 1993. Of all rubella cases reported in 1994, 59% have been associated with an extended outbreak among unvaccinated adults in Massachusetts. Two cases of CRS were reported during January to August 1994; both of these cases were delayed reports of CRS in infants born during 1992-1993. Of five cases of CRS reported during 1993, four were delayed reports for infants born in 1992.

H. influenzae invasive disease — Of 784 cases of invasive *H. influenzae* disease reported during 1994, age was reported for 746; of these, 210 (28%) were in persons aged < 5 years, representing a 20% decrease in reported cases among this age group when compared with 1993. Because of incomplete reporting of serotype, the proportion of cases of *H. influenzae* invasive disease caused by type b organisms is unknown. However, based on active laboratory-based surveillance in four states, during 1993 invasive disease caused by Hib accounted for 27% of all *H. influenzae* invasive disease among children aged < 5 years[3].

Pertussis — During 1994, a total of 2,203 cases of pertussis were reported, compared with 3,171 during 1993. No large (i.e., more than 50 cases) citywide or statewide outbreaks of disease have been reported to CDC in 1994. In contrast, in 1993 large outbreaks occurred in both Chicago and Cincinnati.

Mumps — During 1994, a total of 957 cases of mumps were reported — a 15% decrease from 1993. Of 881 cases in persons with known age, 155 (18%) were in persons aged < 5 years, the same proportion as in 1993.

References

1. CDC. *Certification of poliomyelitis eradication - the Americas, 1994.* MMWR 1994;43:720-22.
2. CDC. *Measles - United States, first 26 weeks, 1994.* MMWR 1994;43:673-76.
3. CDC. *Progress toward elimination of* ***Haemophilus influenzae*** *type b disease among infants and children - United States, 1987-1993.* MMWR 1994;43:144-48.

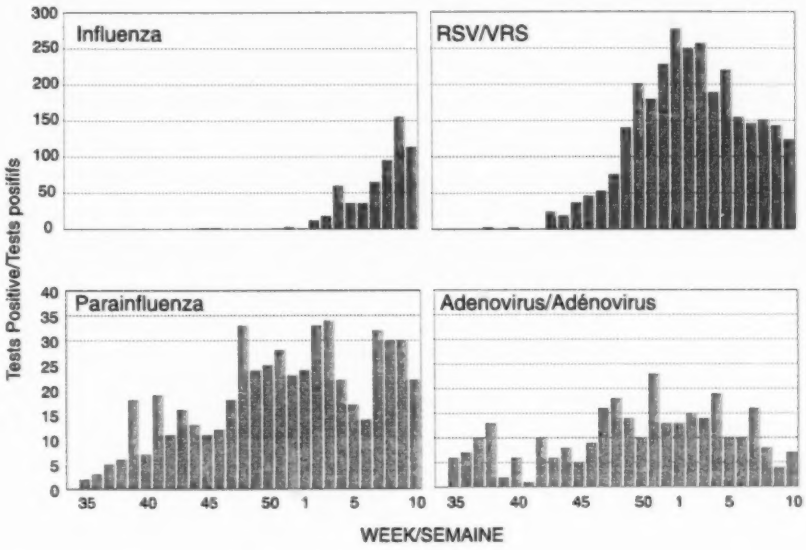
Source: *Morbidity and Mortality Weekly Report, Vol 43, No 39, 1994.*

RESPIRATORY VIRUS SURVEILLANCE
(as of 18 March, 1995)

Reports of laboratory-confirmed respiratory virus infections in Canada appear to be declining (Figure 1). In particular, reports of respiratory syncytial virus (RSV) infection, which total 3,084 to date this season, have fallen since reaching a peak in early to mid-January. Reports of positive parainfluenza (502) and adenovirus (301) tests also appear to have declined.

Reports of influenza infection suggest that there was a late epidemic in Canada this year, which may have only just peaked. To date, 741 positive influenza laboratory tests have been recorded this winter. Of these, 628 (85%) were influenza A and 113 (15%) were influenza B. Although some provinces have recorded localized outbreaks in addition to sporadic cases, no province or territory has reported widespread epidemic activity this season.

Figure 1
Respiratory viruses: positive tests in Canada by week of report



N.B. Please note the difference in scales between the top and bottom figures.

Widespread activity continues to be reported in many regions of the United States. Influenza A is the most common virus reported although influenza B has also been widespread. The World Health Organization (WHO) reports declining or late influenza A and B activity in Europe.

Source: *Laboratories contributing to the Respiratory Virus Surveillance Program, Disease Surveillance Division, Bureau of Communicable Disease Epidemiology, LCDC, Ottawa, and WHO.*

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